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EXAMINER

NG, FAN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,440	Applicant(s) SHIMONISHI ET AL.	
	Examiner FAN NG	Art Unit 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12, 14-27, 31, 33-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/04/2008; 01/07/2009; 03/15/2006; 02/14/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Foreign priority was not grant, because the translation is not provided; correspondently, the examiner could not determine if the specification was enabling the claim limitations.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 1-38 are objected to because of the following informalities: The word "characterized/ wherein" it is not standard US practices to use characterized in the claim, because it reflects indented usage.

1. Claim 1 objected to because of the following informalities: The claim is a hybrid claim (combination of apparatus and method claim), because an apparatus is claimed in the preamble and a method is claimed in the body, furthermore, if the claim is a method claim then there is USC 101 problem, because the body of the claim has no physical structure. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

a. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

b. Claims 19-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

c. Claims 19-20 are directed to relaying method. All physical structure in preamble has been interpreted as intend use, there is no physical structure to perform method in the claim limitations. A method must have physical structure defined in the associated claim limitation in order to be statutory.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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d. Claim 1-8, 12, 14-27, 31, 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandoval (6990073) in view of Tobagi (2002/0080721).

6. As per claim1, **Sandoval teaches** a session relay apparatus for performing session relay processing including congestion control processing (**Fig. 2, all these chart does is congestion control**)

7. characterized in that: each of the plurality of layers only creates the congestion control information (**Fig. 2, notify the sender to slow or stop in #146, #144 is congestion control information**),

8. and the packet delivery control processing is concentrated in a scheduler on an IP (Internet Protocol) layer (**col. 4, line 39-40**).

9. **Sandoval doesn't teach** ... and packet delivery control processing on a plurality of layers,

10.

Tobagi teaches ... and packet delivery control processing on a plurality of layers ([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver, and base on the information from receiver, the transmitter control the packet delivery),

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11. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

12.

13. As per claim2, **Sandoval and Tobagi teach** the session relay apparatus according to claim 1, **Sandoval teaches** wherein reception buffers and transmission buffers corresponding to the plurality of layers are concentrated in a transmission buffer (**Fig. 1, #126, serve as reception buffer also serve as transmission buffer, because two become one so it is concentrated and call it transmission buffer**) corresponding to the IP layer (**col. 4, line 35-40: queue, discard.. all these is relate to buffer and they are base on IP layer protocol**).

As per claim 3, **Sandoval teaches** a session relay apparatus for realizing communication between a reception terminal and a transmission terminal by relaying data between a session to said transmission terminal and a session to said reception terminal (**Fig. 1, #106 relay data from #104 to #108**), characterized by comprising: reception session processing means for receiving data from the session to said transmission terminal (**Fig. 1, #120 is receiving data from #104**); transmission session

processing means for transmitting data to the session to said reception terminal (**Fig. 1, #122 transmit to #108**); a transmission buffer for temporarily storing data delivered to said transmission terminal (**Fig. 1, #126**);

14.

Sandoval doesn't teach a packet scheduler for controlling a packet delivery from said transmission buffer; and delivery control means for controlling the delivery of data stored in said transmission buffer in response to the control of said packet scheduler, wherein said transmission session processing means calculates the amount of data which is permitted to be delivered on the layer, and said packet scheduler controls the packet delivery based thereon

15. **Tobagi teaches** a packet scheduler for controlling a packet delivery from said transmission buffer; and delivery control means for controlling the delivery of data stored in said transmission buffer in response to the control of said packet scheduler (**Fig. 6, #610**), wherein said transmission session processing means calculates the amount of data which is permitted to be delivered on the layer, and said packet scheduler controls the packet delivery based thereon (**[0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver**).

16. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since

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Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

17. As per claim 4, **Sandoval and Tobagi teach** the session relay apparatus according to claim 3, **Sandoval doesn't teach** wherein: said reception session processing means performs reception processing for data from a TCP (Transmission Control Protocol) session, said transmission session processing means processes data for delivery to the TCP session, and notifies said packet scheduler of the amount of data which can be delivered, as determined by TCP window flow control, and said packet scheduler performs scheduling processing based on the notified amount of data

18. **Tobagi teaches** wherein: said reception session processing means performs reception processing for data from a TCP (Transmission Control Protocol) session, said transmission session processing means processes data for delivery to the TCP session, and notifies said packet scheduler of the amount of data which can be delivered, as determined by TCP window flow control, and said packet scheduler performs scheduling processing based on the notified amount of data **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver, furthermore, buffer**

is associated with TCP and TCP is used in feedback mechanism).

19. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

20.

As per claim 5, **Sandoval and Tobagi teach** the session relay apparatus according to claim 3,

Sandoval doesn't teach wherein said packet scheduler determines a session in which a packet is delivered based on a communication resource allocation policy including at least a bandwidth and a bandwidth ratio allocated to the session), the amount of transmissible data notified from said transmission session processing means data), and the amount of data stored in said transmission buffer, to control the data delivery from each of the sessions.

21. **Tobagi teaches** wherein said packet scheduler determines a session in which a packet is delivered based on a communication resource allocation policy including at least a bandwidth and a bandwidth ratio allocated to the session (**Although the data deliver is must depends on the bandwidth, because bandwidth sets a limit to the**

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max. rate that transmitter can send, But [0051] transmission depends on bandwidth, also without clearly specify what is bandwidth ratio, it just a name, and usually ration is between two things but here only bandwidth in involved), the amount of transmissible data notified from said transmission session processing means data **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver),** and the amount of data stored in said transmission buffer, to control the data delivery from each of the sessions **([0006]: buffer in sender).**

22. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

23.

As per claim 6, **Sandoval and Tobagi teach** the session relay apparatus according to claim 3, **Sandoval teaches** wherein said packet scheduler further comprises accumulating means for accumulating unused communication resources in each of the sessions **(Fig. 1, #126: buffer is for accumulating resource when it is not send),** and makes communication using the communication resources accumulated in said accumulating means when the communication resources are required **(Fig, #126: when**

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communication medium allow then transmit packets that are take from this buffer).

As per claim7, **Sandoval and Tobagi teach** the session relay apparatus according to claim 6, **Sandoval teaches** wherein said transmission buffer contains data to be delivered **(it is obvious that a buffer has data inside, because if there is not data inside anything will not happen)**, and said packet scheduler accumulates only a bandwidth of the communication resources **(the bandwidth is an abstract idea, e.g., the bandwidth is 20kHz, then how can it be accumulated?, thus how can bandwidth of communication resources being accumulated?) ...**

24. **Sandoval doesn't teach** ... rendered free by a restriction on the amount of delivery permitted data from said delivery control means.

25. **Tobagi teaches** ... rendered free by a restriction on the amount of delivery permitted data from said delivery control means **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).**

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as

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to prevent congestion is always welcome, they are in the analogues art of communication protocol.

26.

As per claim 12, **Sandoval and Tobagi teach** the session relay apparatus according to claim 3,

27. **Sandoval doesn't teach** including transmission rate control means for controlling transmission control information including at least a bandwidth, availability of transmission, and the amount of transmissible data for controlling transmission processing for a session from said transmission terminal, wherein the transmission control information to said transmission terminal is changed or generated in accordance with the free capacity of said transmission buffer and information from said packet scheduler.

28. **Tobagi teaches** including transmission rate control means for controlling transmission control information **([0021])** including at least a bandwidth **([0022]:bandwidth is the rate of transmission)**, availability of transmission **([0007]: provide the availability at the receiver)**, and the amount of transmissible data for controlling transmission processing for a session from said transmission terminal **([0008])**, wherein the transmission control information to said transmission terminal is changed **(Fig. 7 and [0008]: window size is not the same, thus transmission control information change)** or generated in accordance with the free capacity of said transmission buffer **([0022]: adjusts the size of the receiver buffer)** and information

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from said packet scheduler (**packet scheduler also generate transmission control information, because it schedules how the packet is transmitted, thus without clearly specify what is the different between scheduler and transmission control information, the office think that they are the same**).

29. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

30.

As per claim14, **Sandoval and Tobagi teach** the session relay apparatus according to claim 12, **Sandoval teaches** further comprising means for examining at least one of the free capacity of said transmission buffer and an average thereof (**Fig. 2, #140**), wherein said transmission terminal is instructed to reduce a transmission bandwidth in accordance with the free capacity (**Fig. 2, #146**).

As per claim 15, **Sandoval teaches** a session relay apparatus for realizing a communication between a transmission terminal and a reception terminal by relaying data between a session to said transmission terminal and a session to said reception terminal (**Fig. 1, #106**), characterized by comprising: reception session processing

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means provided in correspondence to a plurality of layers for receiving data from the session to said transmission terminal (**Fig. 1, #120 is receiving data from transmission terminal #104, and it is inherent that any box in Fig. 1 is correspondence to certain layer, because in communication (wire/wireless) all we have is layer structure**); transmission session processing means provided in correspondence with the plurality of layers for transmitting data to the session to said reception terminal (**Fig. 1, #122: transmission session of relay, transmit data to reception terminal #108. and it is inherent that any box in Fig. 1 is correspondence to certain layer, because in communication (wire/wireless) all we have is layer structure**); a transmission buffer for temporarily storing data delivered to said transmission terminal (**Fig. 1, #126**);

Sandoval doesn't teach and a packet scheduler for controlling the delivery of packets from said transmission buffer, wherein each of said transmission session control means calculates the amount of data permitted to be delivered on an associated layer and said packet scheduler controls the packet delivery based on the amount of data permitted in common on all of the plurality of layers.

31. Tobagi teaches and a packet scheduler for controlling the delivery of packets from said transmission buffer, wherein each of said transmission session control means calculates the amount of data permitted to be delivered on an associated layer and said packet scheduler controls the packet delivery based on the amount of data permitted in

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common on all of the plurality of layers **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).**

32. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

33. As per claim16, **Sandoval and Tobagi teaches** the session relay apparatus according to claim 15,

34. **Sandoval doesn't teach** wherein said layers include an iSCSI (internet Small Computer System Interface) layer as one of the layers for conducting congestion control, and the amount of transmissible data is determined on the basis of the amount of receivable data received from said reception terminal on the ISCSI layer.

35.

36. **Tobagi teaches** wherein said layers include an iSCSI (internet Small Computer System Interface) layer **(without clearly specify what does iSCSI, it is just a name)** as one of the layers for conducting congestion control, and the amount of transmissible data is determined on the basis of the amount of receivable data received from said

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reception terminal on the iSCSI layer (**[[0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).**

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

37.

As per claim 17, **Sandoval and Tobagi teach** the session relay apparatus according to claim 15, **Sandoval teaches** further comprising: means for receiving packet delivery information from said packet scheduler (**Fig. 2, #132, buffer is monitored, thus when a packet delivered, the monitoring process will notify, it is the same as get a signal from packet scheduler**); and means for checking said transmission buffer for a free capacity changed by a delivered packet (**Fig. 2, #140 is checking if packet has free space**), wherein the amount of receivable data is generated for said transmission terminal to prompt the same to resume a transmission when the free capacity of said transmission buffer increases to a certain amount or more after a packet has been delivered (**Fig. 2: when #140 is true, transmission terminal will generating more data and transmit to the buffer in the relay, for condition of #140 true, buffer occupancy in relay should be low**).

As per claim18, **Sandoval and Tobagi teach** the session relay apparatus according to claim 3, **Sandoval teaches** wherein said reception session processing means directly stores a received packet in said transmission buffer, and directly delivers the packet from said transmission buffer (**Fig. 1, #126**).

As per claim19, **Sandoval and Tobagi teach** the session relay apparatus according to claim 3, **Sandoval teaches** wherein data is written from an application program into said transmission buffer, and received data is passed to the application program (**any application data is stored in buffer (memory), and at the receiver end if application want to use this data it will take from buffer (memory)**).

As per claim 20, **Sandoval teaches** a session relaying method for a session relay apparatus for performing session relay processing including congestion control processing (**Fig. 2, all these chart does is congestion control**), characterized in that: each of the plurality of, layers only creates the congestion control information (**Fig. 2, notify the sender to slow or stop in #146, #144 is congestion control information**),

38. and the packet delivery control processing is concentrated in a scheduler on an IP (Internet Protocol) layer scheduler (**col. 4, line 35-40: queue, discard.. all these control processing is relate to buffer and they are base on IP layer protocol**).

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39.

Sandoval doesn't teach and packet delivery control processing on a plurality of layers

40.

41. **Tobagi teaches** and packet delivery control processing on a plurality of layers

([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver, and base on the information from receiver, the transmitter control the packet delivery)

42. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

43. As per claim 21, **Sandoval and Tobagi teach** the session relaying method according to claim 20, **Sandoval teaches** wherein a reception buffer and a transmission buffer corresponding to the plurality of layers are concentrated in a transmission buffer **(Fig. 1, #126, serve as reception buffer also serve as transmission buffer, because two become one so it is concentrated and call it transmission buffer)** corresponding to the IP layer **(col. 4, line 35-40: queue, discard.. all these control**

processing is relate to buffer and they are base on IP layer protocol).

44. As per claim 22, **Sandoval teaches** a session relaying method for a session relay apparatus for realizing a communication between a reception terminal and a transmission terminal by relaying data between a session to said transmission terminal and a session to said reception terminal (**Fig. 1, #106 relay data from #104 to #108**), characterized by comprising, on said session relay apparatus side; a reception session step of receiving data from the session to said transmission terminal (**Fig. 1, #120 is receiving data from #104**); a transmission session step of transmitting data to the session to said reception terminal (**Fig. 1, #122 transmit to #108**); a step of temporarily storing data delivered to said transmission terminal in a transmission buffer (**Fig. 1, #126**);

Sandoval doesn't teaches a step of controlling a packet delivery from said transmission buffer in a packet scheduler; and a step of controlling the delivery of data stored in said transmission buffer in response to the control of said packet scheduler in delivery control means, wherein said transmission session processing calculates the amount of data which is permitted to be delivered on the layer, and said packet scheduler controls the packet delivery based thereon.

45. **Tobagi teaches** a step of controlling a packet delivery from said transmission buffer in a packet scheduler (**Fig. 6, #610**); and a step of controlling the delivery of data stored in said transmission buffer in response to the control of said packet scheduler in

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delivery control means, wherein said transmission session processing calculates the amount of data which is permitted to be delivered on the layer, and said packet scheduler controls the packet delivery based thereon **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).**

46. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

47. As per claim23, **Sandoval and Tobagi teach** the session relaying method according to claim 22, **Sandoval doesn't teach** comprising a step for performing reception processing for data from a TCP (Transmission Control Protocol) session, wherein said transmission session step processes data for delivery to the TCP session, and notifies said packet scheduler of the amount of data which can be delivered, as determined by TCP window flow control, whereby said packet scheduler performs scheduling processing based on the notified amount of data.

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48. **Tobagi teaches** comprising a step for performing reception processing for data from a TCP (Transmission Control Protocol) session, wherein said transmission session step processes data for delivery to the TCP session, and notifies said packet scheduler of the amount of data which can be delivered, as determined by TCP window flow control, whereby said packet scheduler performs scheduling processing based on the notified amount of data (**[[0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver, furthermore, buffer is associated with TCP and TCP is used in feedback mechanism)**).

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

49. As per claim 24, **Sandoval and Tobagi teach** the session relaying method according to claim 22,

50. **Sandoval doesn't teach** further comprising the step of determining a session in which a packet is delivered, by said packet scheduler, based on a communication resource allocation policy including at least a bandwidth and a bandwidth ratio allocated to the session , the amount of transmissible data notified from said transmission session

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processing means , and the amount of data stored in said transmission buffer, to control the data delivery from each of the sessions.

51. **Tobagi teaches** further comprising the step of determining a session in which a packet is delivered, by said packet scheduler, based on a communication resource allocation policy including at least a bandwidth and a bandwidth ratio allocated to the session **(Although the data deliver is must depends on the bandwidth, because bandwidth sets a limit to the max. rate that transmitter can send, But [0051] transmission depends on bandwidth, also without clearly specify what is bandwidth ratio, it just a name, and usually ration is between two things but here only bandwidth in involved)**, the amount of transmissible data notified from said transmission session processing means **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver)**, and the amount of data stored in said transmission buffer, to control the data delivery from each of the sessions **([0006]: buffer in sender).**

52. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as

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to prevent congestion is always welcome, they are in the analogues art of communication protocol.

53. As per claim 25, **Sandoval and Tobagi teach** The session relaying method according to any of claim 22, **Sandoval teaches** wherein said packet scheduler further comprises accumulating means for accumulating unused communication resources in each of the sessions (**Fig. 1, #126: buffer is for accumulating resource when it is not send**), and said method further comprising the step of making a communication using the communication resources accumulated in said accumulating means when the communication resources are required in said packet scheduler (**Fig, #126: when communication medium allow then transmit packets that are take from this buffer**).

As per claim 26, **Sandoval and Tobagi teach** The session relaying method according to claim 25, further comprising the step of accumulating, by said packet scheduler,

54. **Sandoval doesn't teach** only a bandwidth of the communication resources rendered free by a restriction on the amount of delivery permitted data from said delivery control means, wherein said transmission buffer contains data to be delivered

55. **Tobagi teaches** only a bandwidth of the communication resources rendered free by a restriction on the amount of delivery permitted data from said delivery control

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means, wherein said transmission buffer contains data to be delivered **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).**

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

56.

As per claim 27, **Sandoval and Tobagi teach** the session relaying method according to claim 22,

57. **Sandoval doesn't teach** further comprising the step of changing a control parameter of the transmission session in accordance with a data delivery situation from said packet scheduler by means for dynamically changing the control parameter.

58. **Tobagi teaches** further comprising the step of changing a control parameter of the transmission session **([0009] and fig. 7, the size of send window is not constant thus send window may be larger or smaller, thus control parameter changed),** in accordance with a data delivery situation from said packet scheduler by means for dynamically changing the control parameter **([0007]: receiver feedback information to**

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transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver, note is the receiver to request).

59.

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

60. As per claim 31, **Sandoval and Tobagi teach** the session relaying method according to any of claims 22 to 29,

61. Sandoval doesn't teaches further comprising the step of changing or generating the transmission control information to said transmission terminal in accordance with the free capacity of said transmission buffer and information from said packet scheduler by transmission rate control means for controlling transmission control information including at least a bandwidth, availability of transmission, and the amount of transmissible data for controlling transmission processing for a session from said transmission terminal.

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62. **Tobagi teaches** further comprising the step of changing or generating the transmission control information ([0021]) to said transmission terminal in accordance with the free capacity of said transmission buffer ([0022]: **adjusts the size of the receiver buffer**) and information from said packet scheduler (**packet scheduler also generate transmission control information, because it schedules how the packet is transmitted, thus without clearly specify what is the different between scheduler and transmission control information, the office think that they are the same**) by transmission rate control means for controlling transmission control information including at least a bandwidth ([0022]: **bandwidth is the rate of transmission**), availability of transmission ([0007]: **provide the availability at the receiver**), and the amount of transmissible data for controlling transmission processing for a session from said transmission terminal ([0008]).

63. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

64.

As per claim 33, **Sandoval and Tobagi teach** the session relaying method according to claim 31, **Sandoval teaches** further comprising the step of instructing said transmission

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terminal to reduce a transmission bandwidth (**Fig. 2, #146**) in accordance with a free capacity examined by means for examining at least one of the free capacity of said transmission buffer and an average thereof (**Fig. 2, #140**).

65. As per claim 34, **Sandoval teaches** a session relaying method for a session relay apparatus for realizing a communication between a transmission terminal and a reception terminal by relaying data between a session to said transmission terminal and a session to said reception terminal (**Fig. 1, #106**), characterized by comprising, on said session relay apparatus side: a reception session step of receiving data from the session to said transmission terminal in each of a plurality of layers (**Fig. 1, #120 is receiving data from transmission terminal #104, and it is inherent that any box in Fig. 1 is correspondence to certain layer, because in communication (wire/wireless) all we have is layer structure**); a transmission session step of transmitting data to the session to said reception terminal in each of the plurality of layers (**Fig. 1, #122: transmission session of relay, transmit data to reception terminal #108. and it is inherent that any box in Fig. 1 is correspondence to certain layer, because in communication (wire/wireless) all we have is layer structure**); a step of temporarily storing data delivered to said transmission terminal in a transmission buffer (**Fig. 1, #126, a buffer for temporarily storing data**);

Sandoval doesn't teach and a step of controlling the delivery of packets from said transmission buffer in a packet scheduler, wherein the amount of data permitted to be

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delivered on an associated layer is calculated in each of the transmission session processing, and said packet scheduler controls the packet delivery based on the amount of data permitted in common on all of the plurality of layers.

66. **Tobagi teaches** and a step of controlling the delivery of packets from said transmission buffer in a packet scheduler (**Fig. 6, #610**), wherein the amount of data permitted to be delivered on an associated layer is calculated in each of the transmission session processing, and said packet scheduler controls the packet delivery based on the amount of data permitted in common on all of the plurality of layers.

([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).

67. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

68. As per claim35, **Sandoval and Tobagi teach** The session relaying method according to claim 34,

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69. **Sandoval doesn't teach** wherein said layers include an iSCSI (internet Small Computer System Interface) layer as one of layers for conducting congestion control, and said method further comprises the step of determining the amount of transmissible data on the basis of the amount of receivable data received from said reception terminal on the iSCSI layer.

70. **Tobagi teaches** wherein said layers include an iSCSI (internet Small Computer System Interface) layer **(without clearly specify what does iSCSI, it is just a name)** as one of layers for conducting congestion control, and said method further comprises the step of determining the amount of transmissible data on the basis of the amount of receivable data received from said reception terminal on the iSCSI layer **([0007]: receiver feedback information to transmitter and prevent or limit amount of data that sender can send, in order to prevent congestion at the buffer in receiver).**

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the teachings of Tobagi into Sandoval, since Sandoval suggests method to relay data according to transmitter and Tobagi suggests a method that associate transmitter and receiver in order to prevent congestion, such as to prevent congestion is always welcome, they are in the analogues art of communication protocol.

71. As per claim 36, **Sandoval and Tobagi teach** the session relaying method according to claim 34, **Sandoval teaches** further comprising the step of generating the

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amount of receivable data for said transmission terminal to prompt the same to resume a transmission when the free capacity of said transmission buffer increases to a certain amount or more after a packet has been delivered (**Fig. 2: when #140 is true, transmission terminal will generating more data and transmit to the buffer in the relay, for condition of #140 true, buffer occupancy in relay should be low**).

As per claim37, **Sandoval and Tobagi teach** the session relaying method according to claim 22, **Sandoval teaches** wherein said reception session step further comprises the step of directly storing a received packet in said transmission buffer, and directly delivering the packet from said transmission buffer (**Fig. 1, #126**).

As per claim38, **Sandoval and Tobagi teach** the session relaying method according to claim 22, **Sandoval teaches** further comprising the step of writing data from an application program into said transmission buffer, and passing received data to the application program (**any application data is stored in buffer (memory), and at the receiver end if application want to use this data it will take from buffer (memory)**).

72. Allowable Subject Matter

73. Claims 9-11, 13, 28-30, 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

74.

75. Conclusion

e. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FAN NG whose telephone number is (571)270-3690. The examiner can normally be reached on Monday-Friday; 7:30am-5:30pm.

f. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571)272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

g. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

76.

77.

78. /Fan Ng/

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79. Examiner, Art Unit 4145

/Robert W Wilson/

Primary Examiner, Art Unit 2419